

CLAIMS

1. A method of manufacturing a patterned electric circuit, the method comprising the steps of:  
5       providing a cold gas-dynamic spraying (CGDS) device,  
          providing a substrate,  
          and depositing a pattern of electrically conductive material with the CGDS device on the substrate by relative movement between the CGDS device to the substrate, wherein prior to depositing the pattern of electrically conductive material,  
10       the CGDS device is used to deposit a bond layer.
2. The method of claim 1, wherein the electrically conductive material is copper or a copper alloy.
- 15 3. The method of claim 1, wherein the bond layer comprises tin, a tin alloy, zinc or a zinc alloy.
4. The method of claim 1, wherein an electric component is placed on the substrate and the CGDS device is used to deposit a bond layer and/or electrically  
20       conductive material on the electric component.
5. The method of claim 4, wherein the bond layer and/or electrically conductive material is deposited on the connection part of the electric component.
- 25 6. The method of claim 1, wherein, after depositing the pattern of electrically conductive material, the CGDS device is used to deposit a layer of dielectric material and then a second pattern of electrically conductive material.
7. The method of claim 1, wherein the substrate has a three-dimensional  
30       contoured shape.
8. A patterned electric circuit manufactured according to any of the preceding claims.

9. Apparatus for manufacturing a patterned electric circuit the apparatus comprising:

a drive mechanism;

a cold gas-dynamic spraying (CGDS) device; and

5 means for controlling, in use, the device mechanism to provide relative movement between the CGDS device and a substrate to deposit a bond layer on the substrate and a pattern of electrically conductive material on the bond layer.

10

15

20

25

30